

IDAHO DEPARTMENT OF LANDS
YEAR-END
FIRE REPORT
CALENDAR YEAR
2016



John Doe Fire-West St. Joe FPD

2016 YEAR-END FIRE REPORT
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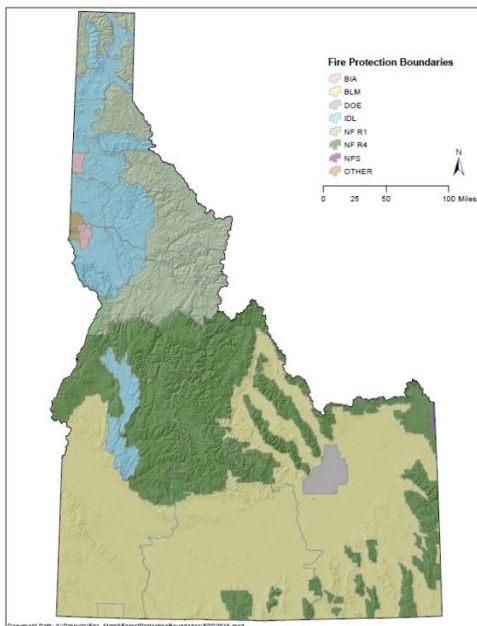
IDAHO DEPARTMENT OF LANDS

YEAR-END FIRE REPORT

FOR CALENDAR YEAR (CY) 2016

SEASON IN REVIEW

The 2016 fire season was below average in terms of fire occurrence, and acres burned, on the Idaho Department of Lands Protection Area. Firefighters responded to 168 fires (the lowest number of fires in 34 years) on lands protected by the Idaho Department of Lands (IDL), Clearwater-Potlatch Timber Protective Association (CPTPA), and Southern Idaho Timber Protective Association (SITPA). These fires burned 1,511 acres, which is 11 percent of the 34-year average acreage burned. The cost estimates on the fire reports were 60 percent of the 34-year average.



Firefighters kept 91 percent of the fires in the IDL protection area to less than 10 acres.

This did not meet the IDL suppression goal of 94 percent of fires contained at less than ten acres. This was due to having fewer fires to spread out statistics, responding to escaped field burns, fires on other protection areas that moved onto IDL protection, and a windy summer.

Human activity ignited 121 fires (72 percent of the year's total) that burned 1,489 acres.

Human-caused fires accounted for 99 percent of the burned area. The miscellaneous category accounted for the most human-caused fires, but

equipment use was the most expensive. Arson fires burned the largest area in the human-caused category.

Lightning started 47 fires (28 percent of the year's total) and burned 22 acres, or 1 percent of the total area.

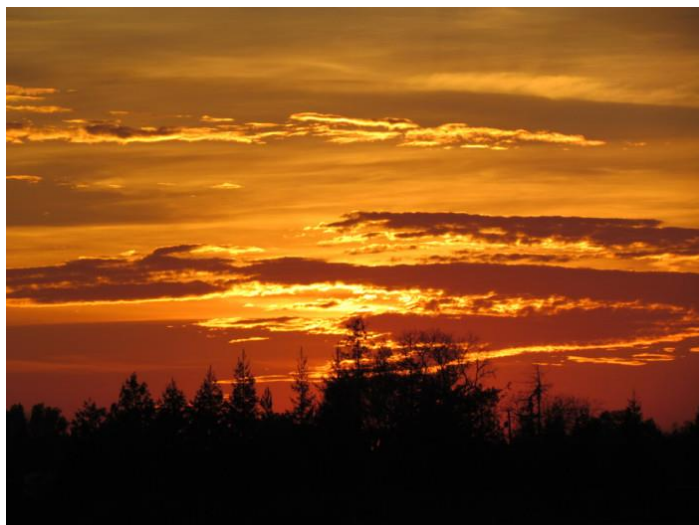
The average fire size was 9 acres (24 percent of average). The median fire size was 0.1 acres, which is the usual. The average cost per fire was \$31,383 and the cost per acre was \$3,489.

2016 LIGHTNING VS HUMAN FIRES						
Year		# of Lightning Fires	Lightning Acres Burned	# of Human Fires	Human Acres Burned	Total # of Fires
2016		47	22	121	1,489	168
2015		150	68,221	171	10,350	321
2014		217	74,104	134	8,421	351
2013		212	2,554	110	4,654	322
2012		81	295	106	4,460	187
10-Yr Avg.		135	21,426	139	3,877	274
20-Yr Avg.		160	16,177	146	3,516	306
34-Yr Avg.		195	10,552	166	3,143	361

Minor discrepancies exist due to rounding

FIRE WEATHER

The winter of 2016 saw close to normal snowfall in the IDL protection area. Fears began to mount when a warm, dry April caused a quick snowpack melt. The warm dry pattern continued through June. July provided relief with cooler temperatures statewide and above normal rains in the



Lewiston and McCall areas. Spokane and Boise remained dry, however. August was warm and dry statewide.

It was a windy summer caused by periodic dry cold front passages, but with few thunderstorms. The usual monsoonal thunderstorms did not come. The cold front winds caused the largest IDL fire, and the lack of thunderstorms produced few lightning fires.

FIRES IN THE WILDLAND URBAN INTERFACE

The Wildland Urban Interface (WUI) consists of areas where human habitation

NUMBER OF WUI FIRES BY CAUSE WITH COSTS					
General Cause	# of Fires	% of Fires	Total Cost	% of Cost	Cost/ Fire
Human-Caused					
Miscellaneous	21	33%	\$87,462	32.5%	\$4,165
Campfire	17	27%	\$27,072	10.0%	\$1,592
Debris Burning	12	19%	\$71,189	26.4%	\$5,932
Arson	6	9%	\$64,293	23.9%	\$10,716
Equipment Use	6	9%	\$15,538	5.8%	\$2,590
Smoking	2	3%	\$3,938	1.5%	\$1,969
Railroad	0	0%	\$0	0.0%	\$0
Children	0	0%	\$0	0.0%	\$0
Total Human	64	100%	\$269,493	100%	\$4,211
Human and Lightning					
Lightning	20	24%	\$85,530	24%	\$4,276
Human	64	76%	\$269,493	76%	\$4,211
Grand Total	84	100%	\$355,023	100%	\$4,226

Minor discrepancies exist due to rounding

adjoins, or is mixed with, the wildland and wildland fuels. The character of the WUI ranges from urban areas adjoining wildlands to isolated ranches or cabins. Using county WUI designations, approximately 45 percent of the lands IDL protects fall within the WUI.

When a fire occurs within the WUI, the job of firefighting becomes more complex. Since 1993, the number of structures in the WUI has nearly doubled. As the number of structures in the WUI continues to increase, concerns over public safety and the protection of improvements increases.

NUMBER OF NON-WUI FIRES BY CAUSE WITH COSTS					
General Cause	# of Fires	% of Fires	Total Cost	% of Cost	Cost/ Fire
Human-Caused					
Miscellaneous	18	32%	\$307,119	6.4%	\$17,062
Equipment Use	14	25%	\$3,033,064	63.4%	\$216,647
Campfire	8	14%	\$161,541	3.4%	\$20,193
Debris Burning	8	14%	\$70,869	1.5%	\$8,859
Arson	8	14%	\$1,211,645	25.3%	\$151,456
Smoking	1	2%	\$1,270	0.0%	\$1,270
Railroad	0	0%	\$0	0.0%	\$0
Children	0	0%	\$0	0.0%	\$0
Total Human	57	100%	\$4,785,508	100%	\$83,956
Human and Lightning					
Lightning	27	32%	\$131,862	3%	\$4,884
Human	57	68%	\$4,785,508	97%	\$83,956
Grand Total	84	100%	\$4,917,370	100%	\$58,540

Minor discrepancies exist due to rounding

In 2016, WUI fires were not as damaging as prior years. Fifty percent of IDL fires started in the WUI, burned 10 percent of the acreage, and accounted for 7 percent of the total cost of suppression. Of the WUI fires, 76 percent were human-caused.



The highest human-caused ignition sources in the WUI were miscellaneous and campfires. Arson fires burned the most area, and miscellaneous fires were the most expensive. In comparison, fires outside the WUI accounted for 50 percent of the ignitions, and burned 90

percent of the total acres. Lightning started the most fires outside the WUI, but only burned 1 percent of the burned area, and was only 3 percent of the cost. Equipment use was the most expensive human-caused category.

WUI ACRES BURNED BY CAUSE WITH COSTS					
General Cause	Acres Burned	% of Acreage	Total Cost	% of Cost	Cost/ Acre
Human-Caused					
Arson	74.0	51.0%	\$64,293	23.9%	\$869
Equipment Use	33.1	22.8%	\$15,538	5.8%	\$470
Debris Burning	30.5	21.0%	\$71,189	26.4%	\$2,334
Miscellaneous	5.4	3.7%	\$87,462	32.5%	\$16,348
Campfire	1.9	1.3%	\$27,072	10.0%	\$14,174
Smoking	0.2	0.1%	\$3,938	1.5%	\$19,692
Railroad	0.0	0.0%	\$0	0.0%	\$0
Children	0.0	0.0%	\$0	0.0%	\$0
Total Human	145	100%	\$269,493	100%	\$1,859
Human and Lightning					
Lightning	11.3	7%	\$85,530	24%	\$7,569
Human	145.0	93%	\$269,493	76%	\$1,859
Grand Total	156.3	100%	\$355,023	100%	\$2,272

Minor discrepancies exist due to rounding

NON-WUI ACRES BURNED BY CAUSE WITH COSTS					
General Cause	Acres Burned	% of Acreage	Total Cost	% of Cost	Cost/ Acre
Human-Caused					
Arson	609.0	45.3%	\$1,211,645	25.3%	\$1,990
Equipment Use	518.3	38.5%	\$3,033,064	63.4%	\$5,853
Miscellaneous	172.6	12.8%	\$307,119	6.4%	\$1,780
Debris Burning	42.4	3.2%	\$70,869	1.5%	\$1,673
Campfire	2.2	0.2%	\$161,541	3.4%	\$75,135
Smoking	0.1	0.0%	\$1,270	0.0%	\$12,701
Railroad	0.0	0.0%	\$0	0.0%	\$0
Children	0.0	0.0%	\$0	0.0%	\$0
Total Human	1,344	100%	\$4,785,508	100%	\$3,560
Human and Lightning					
Lightning	10.6	0.8%	\$131,862	2.7%	\$12,440
Human	1,344.4	99.2%	\$4,785,508	97.3%	\$3,560
Grand Total	1,355.0	100%	\$4,917,370	100%	\$3,629

Minor discrepancies exist due to rounding

LARGE FIRES

In 2016, IDL had three fires that reached or exceeded 100 acres. Maggie Creek FPD had two, and West St. Joe FPD had one. This is the first year since 2009 there were so few fires over 100 acres.

FIRES OVER 100 ACRES			
Fire Name	District	Acres	Cost
Clear Creek 2	Maggie Creek FPD	500	\$487,049
John Doe	West St. Joe FPD	440	\$2,613,231
North Suttler	Maggie Creek FPD	100	\$652,365
Total		1,040	\$3,752,645



A BAE 146 dropping
retardant on the Clear
Creek Fire-Maggie Creek
FPD

MULTIPLE FIRES

A multiple fire day is when one Forest Protective District has more than one fire in the same day. The 2016 fire season saw seven multiple fire days. CPTPA had the most, with seven fires reported in a single day. Lightning started the most fires during multiple fire days with 13 starts. Campfires started four, equipment use and miscellaneous started two each, and an arson fire was started the same day as two campfires.

2016 MULTIPLE FIRES PER DAY BY DISTRICT			
District	# of Days with Multi Fires	Most Fires in 1 Day	Total # Multi Fires
CPTPA	3	7	12
Southwest Idaho FPD	2	3	5
Mica FPD	1	3	3
Pend Oreille FPD	1	2	2
Priest Lake FPD	0	0	0
Kootenai Valley FPD	0	0	0
Cataldo FPD	0	0	0
West St. Joe FPD	0	0	0
Ponderosa FPD	0	0	0
Maggie Creek FPD	0	0	0
Craig Mountain FPD	0	0	0
SITPA	0	0	0
Total	7	20	22
% of Total # of fires			13%



A total of 22 fires, 13 percent of the year's total, occurred on District multiple fire days. Due to very few thunderstorms, this is the fewest number of fires on multiple fire days in at least 34 years.

INCIDENT MANAGEMENT TEAM PARTICIPATION AND USE

In addition to IDL's fire suppression responsibilities, IDL provided reimbursable assistance to other agencies nationally. This assistance was in the form of overhead, firefighters, IDL contracted aircraft, cache supplies, and rolling stock. The Idaho Department of Lands supported Type 1 and 2 Interagency Incident Management Teams (IMT) with 19 employees serving as primary team members. In the Northern Rockies Geographic Area, IDL personnel held 14 positions on teams, and 5 positions on teams in the Great Basin Geographic Area. This participation equates to 16% of all Idaho residents on Northern Rockies teams, and 6% of all Idaho residents on Great Basin teams. Additionally, IDL personnel assisted the national effort by holding 14 positions as alternates, job share, or trainees. Type 3 IMT support included 10 primary and seven alternate, job share, or trainee positions.



IDL not only assists the national fire effort by participating on IMTs, but IDL employees also contributed by accepting 286 off-unit fire assignments in a variety of positions. Resources were sent to 14 states/provinces ranging from

Alaska to California to Georgia. Additionally, 78 man days were spent in Line Officer positions, supervising IMTs, predominantly on IDL fires. IDL also had Line Officers on three fires on federal protection, which involved state or private forested lands. In these cases, Line Officers represent IDL interests and assist local entities in dealing with the federal agencies.

IMT USE BY DISTRICT	
DISTRICT	# OF IMT'S
Maggie Creek FPD	2
Southwest Idaho FPD	1
West St. Joe FPD	3
TOTAL	6

Four IDL fires required the use of six IMTs.
The average IMT use is four per year.

The following table illustrates IDL's use of Incident Management Teams.

INCIDENT MANAGEMENT TEAM USE							
Fire	Size	District	Estimated Cost	Type 3 Team	Type 2 Team	Type 1 Team	Area Command
Clear Creek 2	500	Maggie Creek FPD	\$487,049	X			
John Doe	440	West St. Joe FPD	\$2,613,231	X X	X		
North Suttler	100	Maggie Creek FPD	\$652,365	X			
MM14 Hwy 21*	35	Southwest FPD	\$375,000		X		
Totals	1,075		\$4,127,645	4	2	0	0

*The MM14 fire started on BLM protection and burned 35 acres on IDL protection. Total fire size was 4,306.

When IMTs are deployed, they are supported by smaller specialized teams such as Expanded Dispatch and Buying Teams. Supply and resource orders are placed with Expanded Dispatch, who process the orders and forward the applicable requests to a Buying Team. The Buying Team in turn purchases the requested supplies and they are then transported to the fire.

STRUCTURES THREATENED AND LOST

Fortunately, this year no structures were lost and few were threatened from fires on IDL protection areas. No evacuations occurred.



FIRE COSTS

State fire reports estimate 2016 costs for IDL fires at \$5,272,394. This is 33% of the 10 year average cost and 50% of the 10 year median cost, in 2015 dollars. The expenses in this report are based on a Calendar Year (CY) fire season in order to accommodate most fire reporting systems. The ten most expensive fires of the year are shown in the following table. These fires represent only six percent of the total fires, 79 percent of the total acreage, and 88 percent of the total cost.

TEN MOST EXPENSIVE FIRES IN 2016			
Fire Name	District	Size	Total Cost
John Doe	West St. Joe FPD	440	\$2,613,231
North Suttler	Maggie Creek FPD	100	\$652,365
Clear Creek 2	Maggie Creek FPD	500	\$487,049
MM 14 Hwy 21	Southwest Idaho FPD	35	\$375,000
Short Cut	Craig Mountain FPD	85	\$220,234
Rocky	Southwest Idaho FPD	1	\$154,710
Rolling Hills	Mica FPD	21	\$38,500
Rx Spring Creek	West St. Joe FPD	12	\$37,594
New Centerville	Southwest Idaho FPD	1	\$36,031
Uleda	Priest Lake FPD	3	\$34,787
Total		1,198	\$4,649,501

Human-caused sources started the largest number of fires, and cost the most. In the human-caused category, miscellaneous represented the most fires, but equipment use was the most expensive. The average cost per fire was \$31,383 with average lightning fire expenses being \$4,625, and human-caused fires costing an average of \$41,777.

NUMBER OF FIRES BY CAUSE WITH COSTS					
General Cause	# of Fires	% of Fires	Cost	% of Cost	Cost/Fire
Human-Caused					
Miscellaneous	39	32%	\$394,581	7.8%	\$10,117
Campfire	25	21%	\$188,613	3.7%	\$7,545
Debris Burning	20	17%	\$142,059	2.8%	\$7,103
Equipment Use	20	17%	\$3,048,602	60.3%	\$152,430
Arson	14	12%	\$1,275,938	25.2%	\$91,138
Smoking	3	2%	\$5,208	0.1%	\$1,736
Railroad	0	0%	\$0	0.0%	\$0
Children	0	0%	\$0	0.0%	\$0
Total Human	121	100%	\$5,055,001	100%	\$41,777
Human and Lightning					
Lightning	47	28%	\$217,392	4%	\$4,625
Human	121	72%	\$5,055,001	96%	\$41,777
Grand Total	168	100%	\$5,272,394	100%	\$31,383

Minor discrepancies exist due to rounding

Lightning fires burned 1.4 percent of the acreage in 2016. Arson fires burned the highest number of acres within the human-caused category. Human-caused fires cost a total of \$5,055,001 (96 percent of the total). Of this amount, \$2,862 (0.1 percent of human-caused) of the costs were from fires attributable to

ACRES BURNED BY CAUSE WITH COSTS						
General Cause	Acres Burned	% of Acreage	Cost	Cost/Acre	Bill Amount	Amount Collected
Human-Caused						
Arson	683.0	45.9%	\$1,275,938	\$1,868	\$0	\$0
Equipment Use	551.3	37.0%	\$3,048,602	\$5,530	\$0	\$0
Miscellaneous	177.9	11.9%	\$394,581	\$2,218	\$191	\$191
Debris Burning	72.9	4.9%	\$142,059	\$1,950	\$1,645	\$0
Campfire	4.1	0.3%	\$188,613	\$46,456	\$1,026	\$0
Smoking	0.3	0.0%	\$5,208	\$17,362	\$0	\$0
Railroad	0.0	0.0%	\$0	\$0	\$0	\$0
Children	0.0	0.0%	\$0	\$0	\$0	\$0
Total Human	1,489	100%	\$5,055,001	\$3,394	\$2,862	\$191
Human and Lightning						
Lightning	21.9	1.4%	\$217,392	\$9,931		
Human	1,489	98.6%	\$5,055,001	\$3,394	\$2,862	\$191
Grand Total	1,511	100%	\$5,272,394	\$3,489	\$2,862	\$191
Collections From Prior Years Negligent Fires						\$933,150
Total Calendar Year Collections						\$933,341

Minor discrepancies exist due to rounding

negligence. Responsible parties have been billed. Some investigations are ongoing and additional amounts may be billed based on final investigation findings.

As of November 1, when the fire reports were completed, IDL had collected \$191 (7 percent) of the amount billed. Typically, payment is received from fire billings after November 1. IDL has collected a total of \$933,150 from prior years' negligent fire billings.



Fire expense estimates must be used for this report instead of actual costs. This is because IDL has not yet received a bill for assistance from federal agencies that detail costs for suppression assistance

on IDL fires and reimbursable endowment land fires. The federal bill is usually received in late spring following the prior fire season.

In addition to the above estimated expenses for individual fires, fire suppression costs were incurred in support of fire suppression but not attributable to a specific fire. Examples of these costs are: prepositioning resources to areas of high fire danger or activity, fire simulation exercises, fire suppression aircraft availability, and Fire Bureau and dispatch center support.



Toponce Creek Fire-East of Pocatello

RESOURCE LOSS ON ENDOWMENT LANDS		
District	Timber	Reproduction
IN IDL PROTECTION		
Priest Lake FPD	\$1,500	0
Maggie Creek FPD	\$6,000	0
IDL Protection Total	\$7,500	\$0
IN FEDERAL PROTECTION		
	\$0	\$0
Federal Protection Total	\$0	\$0
Timber/Reproduction Total	\$7,500	\$0
Grand Total	\$7,500	

Losses to the State endowments, in resource damage, are estimated at \$7,500. These losses were incurred on fires at Priest Lake and Kamiah. Natural resource losses for all ownerships in IDL protection are estimated at \$25,575.

PROGRAMS

AVIATION PROGRAM

Overview

In 2016, the fire season seemed to be more predictable than it was in 2015 and the Exclusive Use aviation fleet began the season when normally scheduled. Coverage in the northern part of the state was addressed early with the two helicopters starting the season in Coeur d'Alene along with the Fire Boss, and two of the four SEATs starting in Lewiston, all on July 1st. The remaining two SEATs started the season on July 5th, one in McCall and the other in Coeur d'Alene.

Safety is always the highest priority in all of our operations and aviation is no different. While responding to the Clear Creek Fire on the Maggie Creek Forest Protective District one of the SEATs struck a previously undetected wire. This wire strike was classified as an "incident with potential." Fortunately, there were no injuries and only surficial damage to the aircraft. An incident investigation was conducted immediately thereafter and the resulting documentation was shared in a Rapid Lesson Sharing (RLS) format. The write-up is available for further review at <http://fireaviation.com/2016/09/10/air-tanker-strikes-powerline/>.

The number of fires and acreage burned on IDL protection was down in 2016 compared to the past few seasons. IDL's use of aviation resources supported that finding with only 13 percent of all flight hours being attributable to the state. Support of suppression efforts for our interagency partners, both in Idaho and in our neighboring states, was a large portion of flight time in 2016.

2016 AVIATION SUMMARY									
Aircraft	Total Flight Hours	IDL Flight Hours	Reimbursable Flight Hours	% Reimbursable Flight Hours	Availability	Operating	Total	Reimbursable	IDL Obligation
Helicopter Total	187	26	161	86%	\$1,061,424	\$350,859	\$1,412,283	\$433,013	\$979,271
Fire Boss Total	104	9	95	91%	\$291,022	\$446,463	\$737,485	\$449,863	\$287,622
SEAT * Total	376	50	325	87%	\$839,463	\$1,009,973	\$1,849,435	\$1,037,731	\$811,705
AVIATION TOTAL	667	85	581	87%	\$2,191,909	\$1,807,295	\$3,999,204	\$1,920,606	\$2,078,597

* Total of four were stationed at various locations and times across the State

Minor discrepancies exist due to rounding

Single Engine Air Tankers (SEATs)

The contracted Air Tractor 802F is a fast and maneuverable light fixed-wing tanker aircraft that is both operationally effective and economical. Queen Bee Air Specialties of Rigby, ID has provided the SEAT aircraft for the past five seasons. The US Forest Service continues to provide the tanker base support around the state for IDL's SEATs: one SEAT in Coeur d'Alene, two in Grangeville, and one in McCall. In return, IDL makes its aircraft available for use on Forest Service and BLM fires.

The Coeur d'Alene-based SEAT spent the majority of the season in McCall supporting fire suppression operations in the southern part of the state. The two SEATs that flew out of McCall flew more than 72 percent of the total 375 hours flown during the 2016 fire season.

The Grangeville-Idaho County Airport was undergoing realignment to the runway and taxiway and the airport was closed to fixed wing traffic throughout the entire 2016 fire season. As a result, the operations that support central Idaho were moved to the Lewiston-Nez Perce County Airport where the US Forest Service



had established a temporary Air Tanker Base. Work at the airport in Grangeville has been completed and operations will return to the Grangeville Air Center in 2017.

Amphibious Water Scooper (AWS)/Fire Boss

Following the overall aviation trend, total flight hours for the Fire Boss were down by approximately 55 percent when compared to the 2015 fire season. However, the utilization and effectiveness were instrumental in helping to meet suppression standards. More than 90 percent of the flight time was spent in support of cooperating partner fires.

In the Spring, IDL was invited to attend the annual aerial fire safety training hosted by Aero Spray at the airport in Deer Park, WA. Aviation managers from

Washington DNR and the US Forest Service were also in attendance, along with Aero Spray leadership, pilots, and support personnel.

The Fire Boss is identical to a SEAT except for the added capability to land on water. It is able to re-load its tank and return to the fire without having to return to an established tanker base. It can also carry retardant or gels from a tanker base and mix foam with the water supply when it is scooping. FB-885 was equipped with an onboard gel-blending system capable of carrying up to 40 gallons of liquid gel concentrate. This season IDL opted to use BlazeTamer380 to aid in suppression efforts. BlazeTamer380 is a water enhancer and is used to increase the efficiency of water in firefighting efforts. Additional information on the product can be found at <http://blazetamer.com/products/blazetamer380/>.

Helicopters

Following the intensive 2015 fire season the legislature approved the hiring of a Helicopter Operations Specialist to provide oversight of the helicopter contracts and the helitack crew and program. With that position filled, the program was able to make progress on a number of fronts.

The Idaho Department of Lands opted for two Type II helicopters for the final year of the contract with Kachina Aviation. Both started on July 1 in Coeur d'Alene. The Type II helicopters are able to deliver more firefighters, water, and cargo in a single load and at a lower cost for our needs and response area. The fact that both helicopters were from the same vendor and of the same make and model (Bell 212HP) allowed for the Helitack crew to train together and have flexibility to move between the two aircraft without having to learn the nuances of each aircraft or adjust to varying company policies. The importance of training together can't be stressed enough. When IDL Helitack, and Kachina air crew personnel train together on equipment, it helps to form a resilient, highly motivated, and effective workforce dedicated to safe and rapid initial attack.



For the second year, the Helitack program moved another step closer to the implementation of the Hover Exit/STEP (**S**ingle skid, **T**oe-in, and hover **E**xit **P**rocedure). They were a part of an intensive, three-day training period. The training closed with an interagency review of the process and included live STEP demonstrations that enabled the Helitack crew to become certified for the

season. Currency requirements were met throughout the course of the season, even while the crews were on assignment elsewhere.

The Helitack program supported initial attack on IDL protection and large fire support operations for both IDL and interagency suppression operations, including: Idaho, Montana, Wyoming, and Washington.

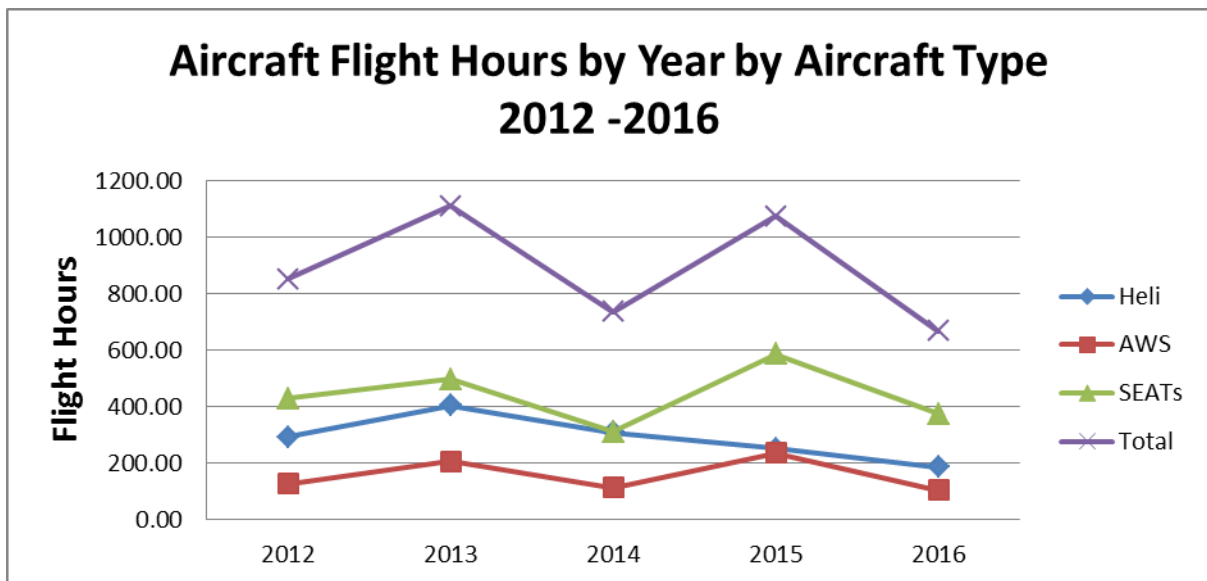
Small Unmanned Aerial Systems (sUAS)

The Idaho Department of Lands recognizes the potential for increased sUAS operations and that establishing a legitimate program is critical. UAS operating in the national airspace system is considered by the Federal Aviation Administration (FAA) as aircraft, regardless of size; therefore, sUAS executing IDL missions are required to adhere to FAA requirements and IDL policy. This summer the FAA released 14 Code of Federal Regulations Part 107 (14 CFR Part 107), *Small Unmanned Aircraft Systems*. These requirements are similar to manned aircraft in terms of pilot training, currency and certification, airworthiness

approval, avionics, and operational restrictions. IDL's sUAS operations policy is currently under development.

IDL continues to assess applicability of the use of sUAS in fire suppression operations as they help to fulfill both the fire program and overall department missions. In the 2015 fire season, IDL had the services of a sUAS available through an Aviation Price Agreement. The sUAS came in to service while conducting the Cape Horn Fire investigation. It provided a perspective unavailable to the ground personnel and helped to identify areas for more intensive study, investigation, and data collection.

Total flight hours for all aircraft were at the lowest point since 2014 as evidenced by the chart below. The chart includes flight hours generated by each aircraft type, including four SEATs, two helicopters, and one AWS.



FIRE TRAINING

The Training and Safety Specialist, within the Fire Bureau, coordinates and tracks the fire training for approximately 540+ full-time and part-time IDL employees and Administratively Determined (AD) Emergency Workers, 270+



Wildfire Coordination
Training at Idaho Falls

Cooperators, and 330+ Rangeland Fire Protection Association (RFPA) personnel.

At the local level, fire staff provides specific training to seasonal personnel for

local district fires. In June, the North Idaho Interagency Guard School took place at Camp Lutherhaven near Coeur d'Alene. This guard school provided basic and advanced wildland firefighting training to 250 participants (IDL, USFS, BLM, U of I, Fire Department and BIA). There were two interagency fire academies in southern Idaho that also provided training for seasonal firefighters. In addition, agency protection staff conducted its second wildland engine academy in Kamiah, ID where 30 participants received advance training in engine apparatus operations.

The Training and Safety Specialist coordinates training for wildland personnel in the Northern Rockies and Great Basin Geographic Areas. Following the National Wildfire Coordination Group (NWCG) interagency standards, the Training and Safety Specialist makes agency certification recommendations and coordinates wildland fire training beyond the basics of wildland firefighting. During the 2016 training season, over 10,000 hours of training were accomplished by IDL fire personnel.

The Training and Safety Specialist is also responsible for tracking fire personnel through a computerized data base, Incident Qualification System (IQS), and issues Incident Qualification Cards (Red Cards) to those personnel who meet NWCG standards. Approximately 440 IDL, 90 Association (CPTPA & SITPA), 270 Fire Service Organization, 4 Idaho Department of Corrections, and 330 RFPA Red Cards were issued through the Fire Bureau, or in conjunction with the District and Association offices.

In 2016, an additional 151 people completed Position Task Books for advanced qualifications beyond basic firefighter. This breaks down to 42 permanent IDL employees, 87 seasonal IDL employees, and 22 Fire Service Organization personnel completing advanced Position Task Books.



Readiness Reviews-SITPA

STATE FIRE ASSISTANCE PROGRAM

Preparedness

The State Fire Assistance (SFA) program helps protect lives, property, and natural resources through the cooperative efforts of the State, local, and federal entities. This program assists with preparedness by training and equipping firefighters for national deployment and by supporting an interagency fire cache and four interagency dispatch centers. IDL leads the Idaho wildland fire community as it works together through State and county working groups, interagency after-action reviews, mock fire exercises, and extensive networking and dialogue.

Volunteer Fire Assistance

Volunteer Fire Assistance (VFA) provides financial assistance to organize, train, and equip Fire Service Organizations (FSOs) and Rangeland Fire Protection Associations (RFPAs) in rural areas and rural communities. There is a continuous effort among fire districts and agencies to strengthen their coordination and communication. In 2016, Idaho Department of Lands received 54 VFA grant applications with a total request of \$339,780; of these, 53 rural FSOs and RFPAs received VFA awards totaling \$333,878.

RANGELAND FIRE PROTECTION ASSOCIATIONS (RFPA) IN IDAHO

A total of eight RFPAs were operational for the 2016 fire season. To date, more than 330 RFPA members have been trained. The eight RFPAs combined protect 1.4 million acres of private rangeland that was previously unprotected, as well as providing secondary protection on 6.3 million acres of federal and State land.



This year was again a success for all eight RFPAs: Mountain Home, Owyhee, Saylor Creek, Three Creek, Black Canyon, Shoshone Basin, Notch Butte, and Camas Creek. Between them, they played a vital role in actively suppressing and limiting acres burned on 27 fires, ranging in size from one-tenth acre to 35,000 acres.

While they were critical in helping suppress fires, the relationships that continue to develop along the way were just as important. This is a testament to the commitment and dedication that the members and leaders from all RFPAs, and the wildland fire agency cooperators, put in to making it successful. RFA members' knowledge of the rangeland is invaluable. They know access routes, water resources, fences, old burn scars, etc., which helps wildland agencies' resources arrive on scene quickly, make sound decisions, and actively engage in suppressing these fires. There were numerous times the RFPAs were ready and willing with tractor disks, dozers, and other equipment to lend a hand in the suppression efforts. Strong leadership is a key factor in making an RFA a success. The leadership in all eight RFPAs run very good programs and maintain good communication with the IDL RFA coordinator, their wildland agency cooperators, and their association membership.

Currently, the Henry Creek RFA in Bonneville County is formalizing and plans to be active for the 2017 fire season.

In June, the Three Creek RFA became the first RFA to be recognized by the State of Nevada, and is currently providing protection to federal and private land in Elko County.

IDL, in cooperation with the U.S. Fish and Wildlife Service provided four type 6 wildland fire engines and five slip in pump and tank units to the RFPAs in 2016.

FEDERAL EXCESS PERSONAL PROPERTY and FIREFIGHTER PROPERTY PROGRAMS

The Federal Excess Personal Property (FEPP) program is authorized by the Federal Property and Administrative Services Act of 1949, as amended (P.L. 94-519), and Section 7 of the Cooperative Forestry Assistance Act of 1978 (P.L. 95-313). The Fire Fighter Property (FFP) program is authorized under 10 U.S.C. 2576b.

The FEPP and FFP programs enable IDL to acquire federal vehicles and equipment for fire protection use by IDL Forest Protective Districts, Timber Protective Associations, and for fire and other emergency use by Fire Service Organizations (FSOs), local: city, county and rural fire districts/departments.

The US Forest Service is currently in charge of these programs nationally, and IDL administers these programs within the state of Idaho. The privilege to acquire and use FEPP and FFP vehicles and equipment is a significant benefit to the citizens of the state of Idaho because it represents a substantial savings for the end user, compared with the cost of purchasing new vehicles or equipment.

The Idaho Department of Lands Vehicle Maintenance Shop in Coeur d'Alene plays a major role in the FEPP and FFP programs. When vehicles and equipment are acquired, they are often refurbished and/or retrofitted by the shop into usable firefighting apparatus. It is common practice for the shop to inspect, repair, and paint vehicles and equipment before being distributed within the IDL fire program or provided to eligible FSOs.

2016 FEPP Program

Throughout 2016, IDL remained focused on acquiring newer, multi-purpose FEPP equipment while disposing of other antiquated equipment based on agency and FSO's needs and requests. The following information details those acquisitions and disposals:

FEPP Asset Acquisitions: 6
Original Acquisition Value: \$384,733.00
Acquisition Value for IDL: \$0
Acquisition Value for FSO: \$384,733.00

Secured Asset Highlights:

- 2 Type 4 Engines
- 1 Model 52 Tank
- 3 700 gallon Slip-On Tanks

FEPP Asset Disposals: 18
Original Acquisition Value: \$279,876.18

Disposal Highlights:

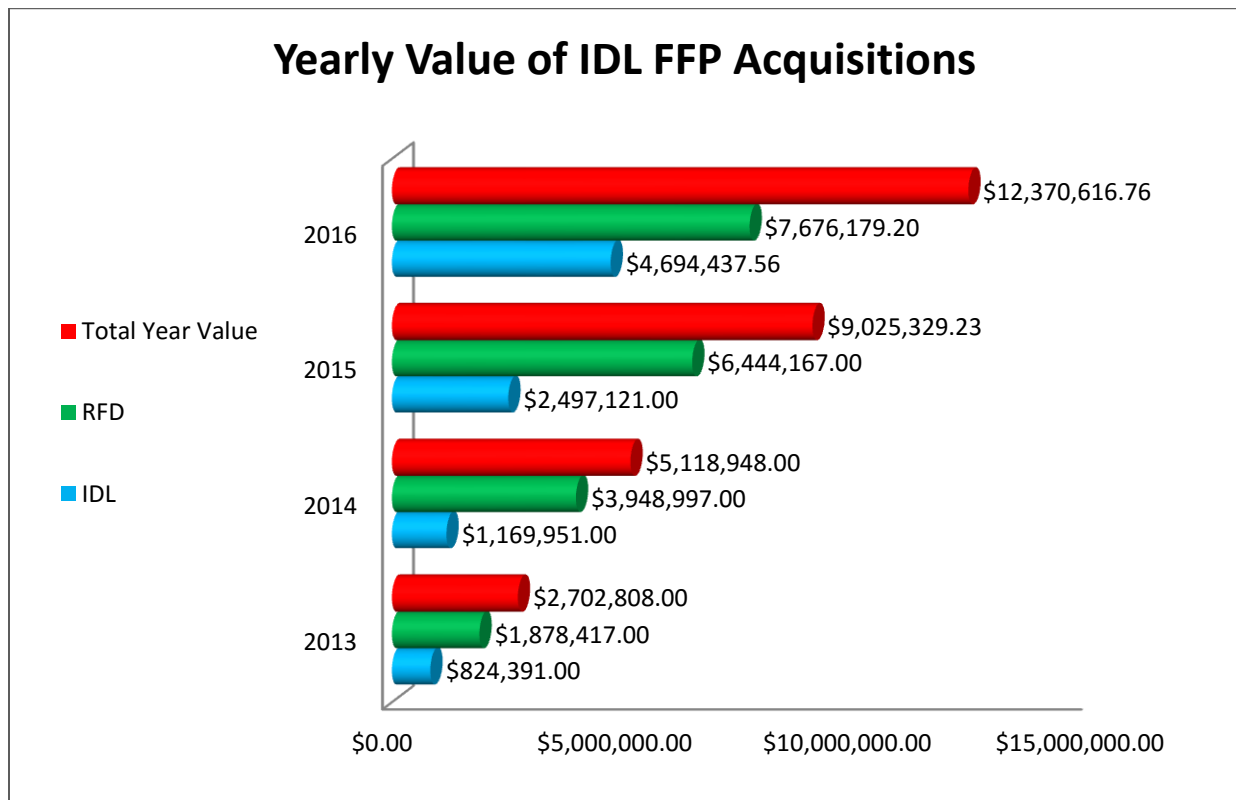
- 4 - Pickups and Trucks
- 6 - Forklifts
- 4 - Trailers
- 4 - Lots Miscellaneous Items



One example of FEPP equipment received in 2016 is two 1997 Fire Engines that were located at the Idaho National Laboratory. These assets were acquired and transferred to two local FSOs in early 2016.

2016 FFP Program

The IDL 2016 FFP Program continued to grow with acquisitions increasing 27 percent over the 2015 FFP acquisition total, and 43 percent higher than the 2014 FFP acquisitions. To best understand the financial benefit received by Idaho through the FFP Program, the chart below shows FFP activity by year.



Total acquisition value received on behalf of IDL Areas and Forest Protective Districts, Timber Protective Associations, Rangeland Fire Protection Associations, and FSOs since 2012 has a cumulative value of \$29,133,660.76 and is distributed as follows:

IDL Acquisition Value	\$9,185,900.56
RFD Acquisition Value	\$19,947,760.20

Examples of two FFP acquisitions placed in service in 2016 include a 916A3 Water Tender with a 4000 gallon Tank and a M1083 5T converted to a Type 4 Engine by a Fire Service Organization.



The 2016 calendar year concluded with IDL acquiring the following:

<u>FFP Asset Acquisitions:</u>	251
<u>Total 2016 Acquisition Value:</u>	\$12.4 million
<u>Acquisition Value for FSO's:</u>	\$9.4 million
<u>Acquisition Value for IDL:</u>	\$2.9 million

Highlights of Secured Assets:

9	<i>HEMTT Tanks</i>
9	<i>Unimogs</i>
5	<i>M978/M997</i>
12	<i>M1083A1 6X6 Tractors</i>
22	<i>M915A1/M916A3 6X6 Tractors</i>
48	<i>100 GPM Pumps</i>

Summary

IDL continues to utilize the FEPP- FFP programs to benefit the entire state with 133 IDL Areas, Forest Protective Districts, Timber Protective Associations, Rangeland Fire Protection Associations, and FSOs participating in the programs. These organizations currently have 335 FEPP and 376 FFP vehicles, pieces of equipment and miscellaneous assets in use protecting Idaho citizens and their resources.

The current FEPP acquisition value is: \$10,055,294.20 (title always retained by the government)

The current FFP acquisition value is: \$23,285,530.18 (title transfers to users)

Idaho's FEPP and FFP inventory is continually changing as screening, acquisition, surplus declarations and disposals occur to meet the needs of the program recipients. *As of December 31, 2016, the cumulative value of IDL FEPP-FFP Program assets are \$33,340,824.38!*

WILDLAND FIRE PREVENTION

Idaho Department of Lands' Fire Prevention and Education Program takes place on several fronts across the state. It takes place at the Area, District and Association offices; at Idaho's Firewise Communities; and with the agency's many interagency collaborators.

To help manage all of this, IDL hired a part-time Fire Prevention and Education Coordinator in 2015, although the position was not operating at full capacity until mid-2016. The coordinator is now working to strengthen the program and each of its fronts.

IDL's Areas, Districts and Associations



Kootenai County Fire Prevention Cooperative

IDL is proactive in educating Idaho's children and adults about wildfire. In 2016 alone, IDL and Timber Protective Association personnel participated in over 85 fire prevention and preparedness outreach events across the state. Events for children and families included school assemblies, Smokey Bear appearances, and such

community events as fairs and parades. Many of these educational efforts were done in collaboration with local fire prevention cooperatives.

In addition, prevention signs were posted, homeowners were educated regarding how to minimize their wildfire risk, prevention inspections were conducted, and 14,000 burn permits were issued online and at IDL offices.

Firewise Communities

Scientific research and real life situations have shown that steps taken to minimize wildfire risk are effective. The international Firewise Communities/USA Recognition Program, firewise.org, empowers neighborhoods to work together to minimize their risk by developing a plan and taking steps each year to become more Firewise.

As Idaho liaison for the program, The Prevention Coordinator works to support Idaho's existing Firewise Communities and to increase the number of recognized Firewise Communities.

In July, the Warm Springs Mesa neighborhood was threatened by Boise's Table Rock Fire, which was started by illegal fireworks. The fire



destroyed one Boise home and burned over 2,600 acres. The blaze burned right up to Warm Springs Mesa but stopped at its periphery, apparently due to the community's Firewise mitigation efforts. This was not the first time the community's work seems to have staved off fire danger. A few years ago, a fallen transmitter caught a squirrel on fire. The fire remained small enough that a woman with a hose was able to extinguish it. The Firewise mitigation that may have saved the community from damage in this instance was done by goats that had been brought in to keep weeds down.



Warm Springs Mesa's wildfire mitigation efforts

Another Idaho Firewise Community, Wilderness Ranch, was honored in December 2016 as it celebrated its 15-year milestone anniversary. Wilderness Ranch is one of just nine recognized Firewise Communities nationwide that joined the program during its first year and is still Firewise today.

These two communities are among Idaho's 24 Firewise Communities. That number represents an increase of three over last year. Ninety-six percent of existing Firewise Communities renewed in 2016. Two new communities joined, Payette River Subdivision No. 1 in McCall and Starweather HOA in Hailey, and one returned, Briarhill in Boise.

Interagency Collaborations

In 2016, much of the work of IDL's wildfire prevention team was done through collaborations with other entities. Collaborators included local fire prevention cooperatives. Idaho Firewise, the University of Idaho, the two regional groups that cover Idaho: Northern Rockies Coordinating Group and Great Basin Coordinating Group, and the national Firewise Communities/USA organization. Partnerships with prevention personnel from the United States Forest Service (USFS) and Bureau of Land Management (BLM) continue to play a key role in funding and accomplishing prevention activities.

Idaho Firewise continues to be another major collaborator. It was a busy year for Idaho Firewise. In addition to developing a strategic plan and starting a new five-year agreement with BLM, they became a 501(c)3 non-profit organization. Idaho Firewise continues to reach out to homeowners with education and grants. The organization distributed almost \$30,000 in grants to six different Idaho entities in 2016. Educational outreach for the year included sponsoring and presenting at meetings, developing new print media, and participating in three media campaigns: "Don't Dump Idaho" with BLM, "Up in Smoke" with the Idaho Office of Emergency Management, and "One Less Spark, One Less Wildfire." A favorite of many people is the organization's network of eight Idaho Firewise Demonstration Gardens. IDL's new Fire Prevention and Education Coordinator serves as an officer on the Idaho Firewise Board of Directors, and is working with the organization to plan various events across the state. Visit their website, idahofirewise.org, for information on how to prepare your home and landscape for wildfire, to apply for a grant, and more.



Two new Keep
Idaho Green
posters



COEUR D'ALENE INTERAGENCY FIRE CACHE

Is an active and partnering member of the National Interagency Support Cache System (NISC), which is comprised of 16 Caches (state and federal) with a collective inventory value of approximately \$125 million. These caches are classified as being either Type 1 or Type 2 based on volume of inventory, complexity of organization, geographical support requirements and capabilities. The Coeur d'Alene Interagency Fire Cache (Cache or CDK) is currently categorized as a Type 2 organization within this NISC community. CDK is also one of two state caches to be NISC members. The US Forest Service funds one permanent position, an Assistant Manager-Administration, and one temporary position within the CDK operation.

The role of the Coeur d'Alene Interagency Fire Cache is to provide logistical support to requesting state, federal, and cooperating agencies. Although the Cache is primarily oriented toward supporting wildland fire suppression activities, it also provides assistance to the Idaho Office of Emergency Management

declared state and federal emergencies, and other natural disasters, as well as large projects such as prescribed burns.

Supply Support

Cache fire support for the 2016 fire season was 27% of the 2015 season. The total volume of supply movement in 2016 equaled \$9,842,617

The Cache had a late start to the fire season, with the first incident support occurring at the end of July. Conditions indicated an average to above average season, but weather patterns of sporadic rains delayed the onset of the season and mitigated the chances for large fire growth. Support was steady into late



August and early September, with an end of the season support totaling three Type 2 and three Type 3 Incident Management Teams and 62 Initial Attack incidents supported.

Staffing and Transportation

Due to the average nature of the 2016 fire season, the Cache was able to provide the necessary supply support, working one shift. The Cache initially worked 12 hour shifts daily to meet the emerging needs of the IMTs and then reduced to 10 hour shifts, seven days per week. The Cache hired an additional 26 casual employees to assist in all areas of operation: shipping, receiving,

returns, refurbishment and transportation. Regular Cache staff were able to provide the required transportation coordination.

The Cache sent three Storekeepers on assignments in 2016 with two Storekeepers going on multiple assignments. CDK provided staff assistance to the following national fire caches: London KY Fire Cache, The Southern CA Fire Cache and the Billings Fire Cache. One Storekeeper went on assignment to the Yale Fire, near Spokane, as a Receiving and Distribution Manager/Cache Demobilization Specialist.

Support vehicles required to meet the transportation objectives are as follows: four box trucks and three pickups. In addition, the Cache fleet was used occasionally for off road Initial Attack supply deliveries. By season's end the Cache had made 86 fire supply deliveries, a total of 59,030 miles.

Data Administration

The Cache was provided funding through the USFS for the hiring of a five month database clerk. The clerk provides support to the Assistant Manager-Administration with database inputs and outputs as well as Small Engine Repair Order processing and fire package reviews.

Small Engine Shop

Even though the North Zone fire season was average, the pump shop assisted in processing approximately 150 Great Basin Mark 3 pumps. To assist with the influx of pumps from the Great Basin Cache, a mechanic detailer was brought in from Alaska Fire Service for a 14-day detail.

2016 Basic Business Summary

Current Cache Value (Pre-inventory)

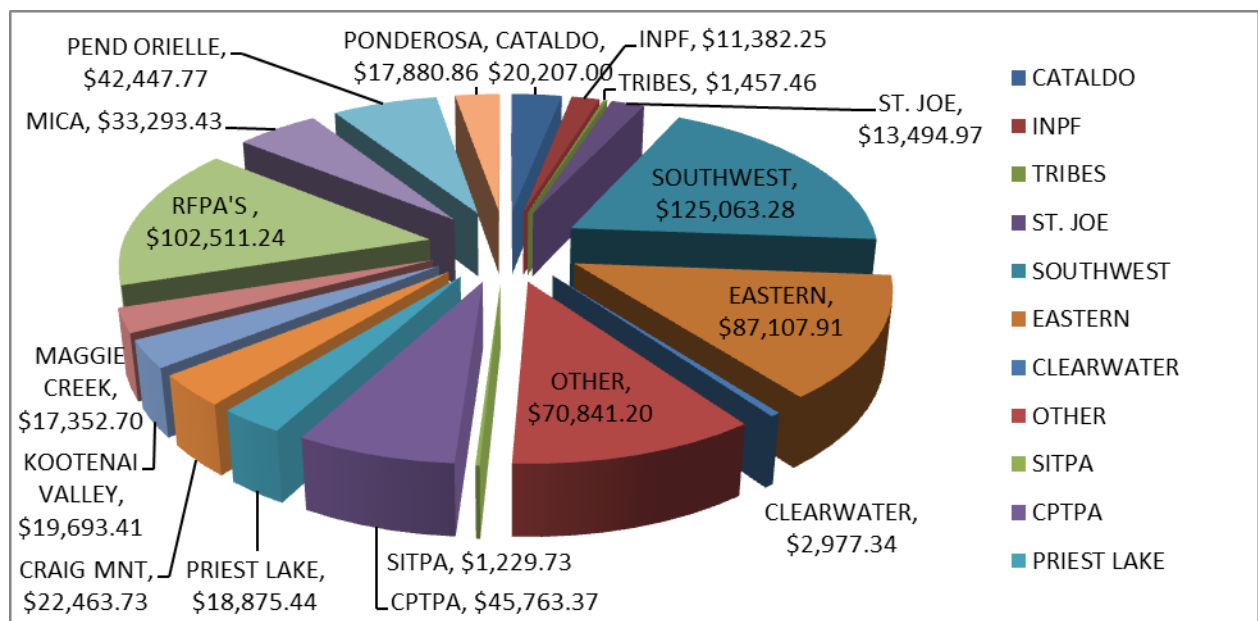
\$8,792,186

- Managed Shelf Stock \$8,210,322
- Managed Field Inventory* \$581,864
 - *Cache supplies prepositioned to Areas, Districts, Associations, Wildland Fire Incidents served 108
- Total Issues-784 \$3, 719,302
- Total Returns-267 \$1,040,718
- Total Transfers Cache to Cache-158 \$5,082,597

Total Supply Movement

\$9,842, 617

2016 Routine Supply Orders from IDL, Tribes and Fire Departments



2016 Sales Total \$654,043.09 vs. 2015 Sales \$505,522.94

Routine orders may have been up this year due to 2015 being such an active year, pointing out the need for more supplies on hand .

APPENDIX

NUMBER OF FIRES BY CAUSE BY DISTRICT										
District	Tot # Fires	Lightning	Misc	Camp-Fire	Debris Burning	Equip Use	Arson	Smoking	Rail-Road	Children
CPTPA	33	18	3	2	1	6	3			
West St. Joe FPD	18	2	1		5	4	5	1		
Pend Oreille FPD	17	4	5	4	2	1		1		
Southwest Idaho FPD	17	2	4	5		3	3			
SITPA	17	6	8	2	1					
Mica FPD	14	6	4	1	1	1	1			
Kootenai Valley FPD	13	2	3	3	4			1		
Maggie Creek FPD	13		4	1	3	3	2			
Ponderosa FPD	9	3	2		3	1				
Priest Lake FPD	7	2	1	4						
Cataldo FPD	5	1	2	2						
Craig Mountain FPD	5	1	2	1		1				
Total	168	47	39	25	20	20	14	3	0	0

ACRES BURNED BY CAUSE BY DISTRICT										
District	Total Acres	Lightning	Arson	Equip Use	Debris Burning	Camp-Fire	Smoking	Rail-Road	Children	Misc
Maggie Creek FPD	641.3	0.0	600.0	0.3	18.2	0.1				22.7
West St. Joe FPD	468.1	0.1	4.0	448.9	14.0		0.1			1.0
Craig Mountain FPD	135.0	2.9		0.1		0.0				132.0
Mica FPD	116.4	1.6	69.0	24.0	20.7	0.1				1.0
Southwest Idaho FPD	78.8	0.7	0.5	75.1		1.7				0.8
CPTPA	31.2	4.1	9.5	1.8	0.3	0.4				15.2
Ponderosa FPD	18.6	1.1		1.0	15.9					0.6
Pend Oreille FPD	6.1	2.4		0.1	0.6	0.4	0.1			2.5
Cataldo FPD	5.7	5.0				0.2				0.5
Kootenai Valley FPD	4.4	0.2			3.1	0.6	0.1			0.4
Priest Lake FPD	3.6	3.1				0.4				0.1
SITPA	2.2	0.8			0.1	0.2				1.2
Total	1,511.3	21.9	683.0	551.3	72.9	4.1	0.3	0.0	0.0	177.9
Minor discrepancies exist due to rounding										

NUMBER OF FIRES IN EACH SIZE CLASS BY DISTRICT								
District	# Fires	A	B	C	D	E	F	G
Priest Lake FPD	7	6	1					
Kootenai Valley FPD	13	9	4					
Mica FPD	14	9	2	3				
Pend Oreille FPD	17	12	5					
Cataldo FPD	5	3	2					
West St. Joe FPD	18	8	8	1		1		
Ponderosa FPD	9	4	4	1				
Maggie Creek FPD	13	8	1	2	1	1		
Craig Mountain FPD	5	2	1	2				
Southwest Idaho FPD	17	12	3	2				
SITPA	17	16	1					
CPTPA	33	28	4	1				
Total	168	117	36	12	1	2	0	0
Class A Fires	0-.25 Ac.							
Class B Fires	.26-9.9 Ac.							
Class C Fires	10-99.9 Ac.							
Class D Fires	100-299.9 Ac.							
Class E Fires	300-999.9 Ac.							
Class F Fires	1,000-4,999.9 Ac.							
Class G Fires	5,000+ Ac.							

SUPPRESSION COST PER FIRE				SUPPRESSION COST PER ACRE BURNED			
District	# of Fires	Suppression Cost	District Cost/Fire	District	# of Acres	Suppression Cost	District Cost/Acre
CPTPA	33	\$165,043	\$5,001	Maggie Creek FPD	641.3	\$1,197,065	\$1,867
West St. Joe FPD	18	\$2,729,637	\$151,647	West St. Joe FPD	468.1	\$2,729,637	\$5,831
Pend Oreille FPD	17	\$64,684	\$3,805	Craig Mountain FPD	135.0	\$254,209	\$1,883
Southwest Idaho FPD	17	\$637,389	\$37,493	Mica FPD	116.4	\$66,425	\$571
SITPA	17	\$33,029	\$1,943	Southwest Idaho FPD	78.8	\$637,389	\$8,091
Mica FPD	14	\$66,425	\$4,745	CPTPA	31.2	\$165,043	\$5,293
Kootenai Valley FPD	13	\$22,138	\$1,703	Ponderosa FPD	18.6	\$43,477	\$2,344
Maggie Creek FPD	13	\$1,197,065	\$92,082	Pend Oreille FPD	6.1	\$64,684	\$10,604
Ponderosa FPD	9	\$43,477	\$4,831	Cataldo FPD	5.7	\$21,449	\$3,763
Priest Lake FPD	7	\$37,848	\$5,407	Kootenai Valley FPD	4.4	\$22,138	\$5,031
Cataldo FPD	5	\$21,449	\$4,290	Priest Lake FPD	3.6	\$37,848	\$10,513
Craig Mountain FPD	5	\$254,209	\$50,842	SITPA	2.2	\$33,029	\$14,811
Total	168	\$5,272,394	\$31,383	Total	1,511	\$5,272,394	\$3,489
Minor discrepancies exist due to rounding				Minor discrepancies exist due to rounding			

2016 CONSECUTIVE 7 DAYS OF HIGHEST FIRE OCCURANCE		
Month	Day	# Fires
8	16	1
8	17	3
8	18	3
8	19	4
8	20	1
8	21	3
8	22	1
Total		16

39 days had more than 1 fire in IDL Protection
106 fires (63%) occurred on these 39 days
The top fire day was 7/12, when 7 fires occurred

NUMBER OF AIRCRAFT USED ON FIRES			
District	Air Tankers	Helicopters	Total Air Use
Maggie Creek FPD	9	15	24
West St. Joe FPD	13	8	21
Southwest Idaho FPD	8	13	21
CPTPA	0	10	10
Craig Mountain FPD	4	4	8
Ponderosa FPD	2	2	4
Pend Oreille FPD	2	1	3
SITPA	0	3	3
Priest Lake FPD	2	0	2
Mica FPD	1	0	1
Cataldo FPD	0	1	1
Kootenai Valley FPD	0	0	0
Total	41	57	98

The above table illustrates the number of aircraft used on fires in the Forest Protective District. It does not reflect the amount of use per fire.

AFTER SHIFT

